

of the parent application was motivated, in part, to further prosecution of the parent in view of the office action of April 23, 2003. In the office action, claims 1-9, 19-20, 23-25, 27-30, 32-33, 35-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over by Mawhinney et al. (U.S. Patent No. 6,038,219) (hereinafter *Mawhinney*) in view of Cern (U.S. Patent No. 5,815,298) (hereinafter *Cern*). Claim 31 was allowed. Claim 21 is objected to as being dependent upon a rejected base claim, but would be allowed if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims having substantially similar subject matter to the claims now present in the continuation were finally rejected in the April 23, 2003 office action in view of new art in combination with previously-cited art. Applicants respectfully assert the rejections were improper and should be withdrawn, as argued below. Accordingly, Applicants respectfully request reconsideration and allowance of all pending claims.

CLAIM REJECTIONS - 35 U.S.C. § 103

To establish a *prima facie* case of obviousness, there must first be some suggestion or motivation to modify a reference or to combine references, and second be a reasonable expectation of success. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. Third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. M.P.E.P. § 706.02(j) from *In Re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Where claimed subject matter has been rejected as obvious in view of a combination of prior art references, a proper analysis under § 103 requires, *inter alia*, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed device; and (2) whether the prior art would also have revealed that in so making, those of ordinary skill would have a reasonable expectation of success. Both the suggestion and the reasonable expectation of

success must be founded in the prior art, not in the Applicants' disclosure. *Amgen v. Chugai Pharmaceutical*, 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991), *Fritsch v. Lin*, 21 USPQ2d 1731 (Bd. Pat. App. & Int'l 1991). An invention is non-obvious if the references fail not only to expressly disclose the claimed invention as a whole, but also to suggest to one of ordinary skill in the art modifications needed to meet all the claim limitations. *Litton Industrial Products, Inc. v. Solid State Systems Corp.*, 755 F.2d 158, 164, 225 USPQ 34, 38 (Fed. Cir. 1985).

The examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. M.P.E.P. § 70602(j) from *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). Obviousness cannot be established by combining references without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done. M.P.E.P. § 2144 from *Ex parte Levingood*, 28 USPQ2d 1300, 1302 (Bd. Pat. App. & Inter. 1993) (emphasis added by M.P.E.P.).

Argument in Support of Allowance of Independent Claims

Independent claims 1, 7, 16, and 22 each pertain to operation of a "wireless optical system link." In particular, each independent claim recites the operations of monitoring an *optical signal* quality of the wireless optical signal link and rerouting traffic to a secondary (or alternate) channel or link when a marginal operating condition is detected. Claim 1 is illustrative of this element, and recites:

1. A system comprising
first and second wireless optical system transceivers to exchange customer traffic via a *primary channel comprising a wireless optical system link*;
first and second network devices coupled to the first and second wireless optical system transceivers, respectively, to selectively route the customer traffic via the primary channel or via an alternate channel; and

first and second link quality agents, coupled to the first and second wireless optical system transceivers, respectively, and coupled to the first and second network devices, respectively, ***to monitor an optical signal quality*** of the *wireless optical system link* and to control the first and second network devices to route the customer traffic to the alternate channel and to route test traffic to the wireless optical system link when the optical signal quality of the wireless optical system link is determined. (Emphasis Added).

In support of the rejection of claims 1-3, 9, 19-20, 23, 30, and 36-37 in the parent, the examiner asserts that *Mawhinney* teaches a system including all of the recited elements except for using wireless optical system transceivers. To overcome this defect, the examiner states,

The optical transceiver of Cern can be implement[ed] into *Mawhinney* by replace[ing] the ports (*Mawhinney*, Fig. 3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize the optical transceiver of Cern into *Mawhinney*'s access device (block 212 in Fig. 3) for transmitting data information in WLAN with high data rate and more efficiency.

Mawhinney concerns a user-configurable frame relay network system that allows data to be rerouted from a primary communication link comprising frame relay user equipment to a secondary communication link that does not employ the frame relay network, such as a leased line. As clearly shown in Figure 2, a plurality of access units are employed to detect the operation of a primary link and reroute traffic to the secondary communication channel when an error is detected. Also as clearly shown in Figure 2, each primary communication comprises a "virtual circuit" that spans at least one router (i.e., *frame-relay user equipment*). This is significant, since it reflects the nature of a failure or fault in the primary communication link, which is non-analogous to the reasons for faults or failures in wireless optical communication links addressed by the present invention.

More specifically, *Mawhinney* detects link failures by detecting lost packets and/or complete link failures. Unlike with wireless optical links, the lost packets are not a result of the degradation of the network medium itself (e.g., a copper or fiber cable), but rather the result of insufficient capacity at a frame relay (i.e., "node") to handle user traffic. As recited in *Mawhinney*,

As is known in frame relay technology, some errors will invariably be encountered occasionally across any virtual circuit. These errors result from a variety of reasons. Traffic congestion often leads to errors. For example, during a transient time of peak usage, an intermediate node within the frame relay network may become congested with data traffic from various sources. If so much data is received as to fill up the intermediate node's buffer space, the node often, by design, drops packets. Therefore, **even during normal operation, and with no physical fault in the data path**, a virtual circuit may lose packets. Utilizing the sequence number, a transmitting device may look for acknowledgments of the various packets transmitted. If a return/acknowledgment is received out of sequence, the transmitting device will know that intermediate packets were dropped. In this regard, the permanent virtual circuit of a frame relay differs from other packet transmitting technologies, such as IP routers. In this regard, in a virtual circuit, the same intermediate route is utilized for all data packets transmitted. In contrast, IP routers route data packets based on a number of factors, and, as a result, packets transmitted from a transmitting node to a receiving node through a number of intermediate nodes may not all be transmitted along the same route or succession of intermediate nodes. (Col. 14, line 65 – col. 15 line 22, Emphasis added)

In contrast, data errors for wireless optical links result from losses in the transmission medium itself, i.e., the optical signal. Unlike with the foregoing frame relay network, a wireless optical link comprises a link between two optical transceivers. There is no intermediate equipment in the link. Thus, data loss failures result from inadequate optical signal quality, or the failure of a transceiver. This is opposite the most common failure mode for frame relay networks – the failure of intermediate equipment (i.e., a frame-relay routing equipment at a node) to handle the routing of data packets).

Returning to claim 1, the claim specifically recites that the first and second link quality agents are provided "to monitor an optical signal quality of the *wireless optical*

system link and to control the first and second network devices to route the customer traffic to the alternate channel and to route test traffic to the wireless optical system link when the optical signal quality of the wireless optical system link is determined."

(Emphasis added.)

Clearly, *Mawhinney* does not disclose, teach or suggest monitoring of an optical signal quality of a wireless optical system link since this type of transport medium is not employed in *Mawhinney*'s frame relay network. Nor is such disclosed, taught, or suggested by *Cern*.

Cern concerns a system and method for wirelessly communicating a sound signal. As discussed in the Background of the Invention section, the invention is directed at assisting technicians in performing an initial alignment of wireless optical communication system transceivers. As stated in *Cern*,

In an alignment mode, the aiming station may transmit a test signal, and the test signal strength, as received at the remote station, may be represented by an acoustic signal which is communicated back to the aiming station. Preferably, the acoustic signal is in the form of a tone signal. The test signal is transmitted by transmitter 14 of the aiming station and at least a portion of the signal is received at receiver 12 of the remote station. The signal received at the remote station is applied to detector 16. Detector 16 is a rectifying detector providing a DC voltage signal output that is substantially proportional to the amplitude of the received signal. The output signal of detector 16 is applied to voltage controlled audio oscillator 24, which outputs an audio output signal whose frequency is proportional to a voltage. Thus, the output signal of voltage controlled audio oscillator 24 is an audio signal whose frequency is proportional to the strength of a received test signal. If the received signal strength is zero, voltage controlled audio oscillator 24 provides a low base frequency. As the signal strength rises, the pitch of the audio tone increases proportionally. Voltage controlled audio oscillator 24 applies the audio signal to the pulse width modulator 20 via switching unit 32. Pulse width modulator 20 modulates the audio signal, in accordance with a pulse width modulation scheme, over a carrier test signal provided by test signal generator 18. (Col. 4, line 48 – col. 5 line 5)

and

Thus, an indication of the signal strength received at the remote station is received at the aiming station via the optical communication airlink. Hence, *an aimer positioned at the aiming station* may align the

system in accordance with the voice signal generated by the loudspeaker. The aimer may displace and rotate transceiver 10 of the aiming station until the highest frequency tone signal is received.

The test signal strength may also be used to indicate a fade margin, which is a factor employed to describe the excess of signal strength over path attenuation. In accordance with a preferred embodiment of the present invention, a readout signal is normalized to a receiver threshold level, which is typically a constant value supplied by the manufacturer of the receiver. By normalizing the readout to the receiver threshold level, a *technician may interpret the readout as the fade margin at installation time, which typically takes place in clear weather, without performing additional calculations.* (Col. 5, lines 45-61, emphasis added)

In no instance is an agent used to monitor anything relating to the optical signal quality in *Cern*. Rather, a technician (e.g., aimer) listens to the pitch of an audio signal that is fed back to the technician via the optical link in response to a test signal sent to the remote transceiver to which a local transceiver operated by the technician is being aligned with.

Clearly, *Cern* does not disclose, teach, or suggest the element of employing a link-monitoring agent to monitor an optical signal quality of the wireless optical system link. As discussed above, neither does *Mawhinney*. Accordingly, the third prong of the obviousness test is clearly not met by the combination of *Mawhinney* and *Cern*, and rejection of claim 1 would be improper. Therefore, claim 1 is in condition for allowance.

Furthermore, there is no motivation found in either *Mawhinney* or *Cern* to combine the references, nor would there be any expectation of success. As stated earlier, frame relay networks comprise multiple transmission segments that are coupled to network nodes (frame relay user equipment) to form virtual circuits. The virtual circuit is not directly coupled between a single pair of transceivers. A primary motivation for employing wireless optical network links is to link network endpoints that otherwise may not access the high bandwidth capacity of a wireless optical link. Since *Cern* concern aligning wireless optical transceivers using an audio feedback signal indicative of the signal strength detected by a remote transceiver, there is no connection between the

frame relay of *Mawhinney* and *Cern*'s disclosure. Accordingly there is no motivation to combine nor would anyone of ordinary skill in the art have a reasonable expectation of success if the references were combined.

For similar reasons, each of independent claims 7, 16, and 22 is also in condition for allowance. Furthermore, each of claims 2-6, 8-15, 17-21, and 23, which are dependent on independent claims 1, 7, 16, and 22, are in condition for allowance for at least the same reasons as their respective base claims.

If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to the allowability of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

Date: July 22, 2003

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